Response to Office action 10/31/2005
Response submitted December 28, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended). A method for determining at least one critical path of an integrated circuit limiting a processing speed of the integrated circuit, the method which comprises:

a) determining paths provided in the integrated circuit, mean path transit times of the paths, and path transit time fluctuations of the paths;

b) ordering the paths to form a path group with the paths having substantially an identical mean path transit time and having an identical path transit time fluctuation;

c) calculating a group figure for each path group, the group figure statistically describing the path transit time distribution of a respective path group;

d) calculating a total figure for a totality of the paths considered, the total figure statistically describing the path transit time distribution of the totality of the paths considered; and

e) determining the at least one critical path of the integrated circuit by comparing the group figures at least as great as a critical path transit time determined by taking into consideration the total figure.

Claim 2 (original). The method according to claim 1, which further comprises, in step e), predetermining a value for the total figure and determining the critical path transit time as the path transit time at which the total figure assumes the predetermined value.

Claim 3 (original). The method according to claim 1, which further comprises determining as critical paths the paths having group figures exceeding a predeterminable threshold value at least as great as the critical path transit time.

Claim 4 (original). The method according to claim 2, which further comprises determining as critical paths the paths having group figures exceeding a predeterminable threshold value at least as great as the critical path transit time.

Claim 5 (original). The method according to claim 1, which further comprises, after step a), discarding all the paths having the mean path transit time less than $\alpha \times Tm$, where Tm is the maximum mean path transit time determined in step a) and α is a quantity of less than 1.

Claim 6 (currently amended). The method according to claim 1, which further comprises, after step a), discarding all the paths having the mean path transit time

less than $\alpha \times$ Tm, where Tm is ~~the~~ a maximum mean path transit time determined in

step a) and α is a quantity equal to approximately 0.8.

Claim 7 (currently amended). The method according to claim 1, which further

comprises, after step a), discarding all the paths having the mean path transit time

less than $\alpha \times$ Tm, where Tm is ~~the~~ a maximum mean path transit time determined in

step a) and α is a quantity of less than approximately 0.8.

Claim 8 (currently amended). The method according to claim 1, which further

comprises:

defining the group figure by an integral over a sum of probability distributions of ~~the~~

path transit times of the paths of the path group considered; and

for calculating the sum of the probability distributions, forming a product of ~~the~~ a

number of paths of the path group and the probability distribution of one path of the

path group.

Claim 9 (original). The method according to claim 1, which further comprises defining

the total figure by a sum of the group figures.

Claims 10 - 13 (canceled).

Claim 14 (currently amended). The method according to ~~claim 10~~ <u>claim 1</u>, which further comprises, after step a) and before step b), discarding all the paths having the mean path transit time less than $\alpha \times Tm$, where Tm is the maximum mean path transit time determined in step a) and α is a quantity of less than 1.

Claim 15 (currently amended). The method according to ~~claim 10~~ <u>claim 1</u>, which further comprises, after step a) and before step b), discarding all the paths having the mean path transit time less than $\alpha \times Tm$, where Tm is the maximum mean path transit time determined in step a) and α is a quantity equal to approximately 0.8.

Claim 16 (currently amended). The method according to ~~claim 10~~ <u>claim 1</u>, which further comprises, after step a) and before step b), discarding all the paths having the mean path transit time less than $\alpha \times Tm$, where Tm is the maximum mean path transit time determined in step a) and α is a quantity of less than approximately 0.8.

Claims 17 - 18 (canceled).

Claim 19 (currently amended). A method for determining at least one critical path of an integrated circuit limiting a processing speed of the integrated circuit, <u>the method</u> which comprises:

a) determining paths provided in the integrated circuit, mean path transit times of the paths, and path transit time fluctuations of the paths;

b) ordering the paths to form a path group with the paths having a substantially

identical mean path transit time and a substantially identical path transit time

fluctuation;

c) calculating a group figure for each path group, the group figure statistically

describing the path transit time distribution of a respective path group;

d) calculating a total figure for a totality of the paths considered, the total figure

statistically describing the path transit time distribution of the totality of the paths

considered; and

e) determining the at least one critical path of the integrated circuit by comparing the

group figures at least as great as a critical path transit time determined by taking into

consideration the total figure.